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## NASA TECH BRIEF



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## **Uppercase and Lowercase Computer Printout Increases Readability**

**The problem**: To produce a computer printout similar to typeset material. Normally, computer printers produce only uppercase characters and the result is poor readability in some types of copy, such as reports.

**The solution:** A 120-character print chain that enables printout in both uppercase and lowercase characters using a standard continuous chain computer printer.

**How it's done:** The 120-character print chain replaces the standard 48-character chains that are widely used on medium-to-large scale computer printers. In normal operation, the 120-character print chain will select only lowercase characters, so that selection of uppercase characters only need be determined. This may be accomplished either by special data characters preceding those to be capitalized or by the position of the character in the line.

One configuration with distinctive data codes for selection uses a delta ( $\Delta$ ) before single characters to key them to uppercase and a semicolon (;) before strings of characters to be uppercased. In use of the semicolon, the first blank space encountered shifts the printer back to lowercase. If it is desired to capitalize

the first (or any other) characters in each line, such as in tabular compilations, control of the printer can be set to shift automatically.

## Notes:

- 1. Output speed using the 120-character chain is reduced by a factor of 2.5.
- 2. This machine modification should be of interest to organizations desiring more readable machine-compiled reports.
- 3. Inquiries concerning this invention may be directed to:

Technology Utilization Officer National Aeronautics and Space Administration Code ATU Washington, D.C., 20546 Reference: B65-10286

**Patent status:** NASA encourages the immediate commercial use of this invention. Inquiries about obtaining rights for its commercial use may be made to NASA, Code AGP, Washington, D.C., 20546.

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